

## CLAIMS

- 1 1. An optimization system for processing encoded video data, comprising:  
2 a frame analysis system that determines if a current video frame having an  
3 overlaid area acts as a reference for future video frames; and  
4 a system for identifying a skippable region in the overlaid area.
- 1 2. The optimization system of claim 1, wherein the frame analysis system examines a  
2 picture type of the current video frame, and wherein the identification system identifies  
3 the entire overlaid area as the skippable region if the current video frame comprises a B  
4 picture.
- 1 3. The optimization system of claim 1, wherein the frame analysis system examines a  
2 sequence of video frames, and wherein the identification system identifies the entire  
3 overlaid area as the skippable region if none of the sequence of video frames acts as  
4 reference frames.
- 1 4. The optimization system of claim 1, further comprising a motion vector analysis  
2 system that calculates a motion vector range for the current video frame.
- 1 5. The optimization system of claim 4, wherein the skippable region comprises the  
2 overlaid area less an area defined by the motion vector range.

6. The optimization system of claim 1, further comprising a motion vector analysis system that examines motion vectors in a predicted frame that references the current video frame in order to identify prediction macroblocks in the overlaid area of the current video frame.

1 7. The optimization system of claim 6, wherein the skippable region comprises the  
2 overlaid area less the prediction macroblocks identified in the overlaid area of the current  
3 video frame.

1 8. The optimization system of claim 6, wherein the predicted frame includes the overlaid  
2 area, and wherein the motion vector analysis system does not examine motion vectors in  
3 the overlaid area of the predicted frame.

1 9. The optimization system of claim 1, further comprising a system for examining side  
2 information in the encoded video data.

1     10. The optimization system of claim 1,  
2             wherein the frame analysis system determines a plurality of predicted frames that  
3     reference the current video frame;  
4             wherein the identification system identifies a plurality of skippable regions; and  
5             wherein a final skippable region is determined as a cross set of each of the  
6     identified skippable regions.

- 1 11. The optimization system of claim 1, further comprising a decoder for decoding the  
2 encoded video data.
- 1 12. The optimization system of claim 11, wherein the skippable region is utilized by a  
2 component of the decoder to reduce computational complexity.
- 1 13. The optimization system of claim 12, wherein the component is selected from the  
2 group consisting of: an inverse scanning/inverse quantization system, an inverse discrete  
3 cosine transform system, a motion compensation system, and a residual adding system.



20. A method of processing encoded video data, comprising the steps of:

determining if a current video frame having an overlaid area acts as a reference for future video frames; and

identifying a skippable region in the overlaid area.

21. The method of claim 20, wherein the identifying step comprises the steps of:

calculating a motion vector range for a predicted frame that references the current video frame; and

identifying the skippable region as comprising the overlaid area less an area defined by the motion vector range.

22. The method of claim 20, wherein the identifying step comprises the steps of:

examining motion vectors in a predicted frame that references the current video frame to identify prediction macroblocks in the current video frame; and

identifying the skippable region as comprising the overlaid area less the prediction macroblocks identified in the overlaid area.

23. The method of claim 20, wherein the determining step includes the step of:

examining side information in the encoded video data.

24. The method of claim 20, wherein the identifying step includes the step of:

examining side information in the encoded video data.